L Number	Hits	Search Text	DB	Time stamp
1	1781	438/706,687,688.ccls.	USPAT; US-PGPUB	2003/02/21 09:54
3	48	438/706,687,688.ccls. and ((via or trench or recess or opening or hole) with light)	USPAT; US-PGPUB	2003/02/21 09:54
4	62257	438/$.ccls.	USPAT; US-PGPUB	2003/02/21 09:54
5	2519	438/$.ccls. and ((via or trench or recess or opening or hole) with light)	USPAT; US-PGPUB	2003/02/21 09:55
6	2471	(438/$.ccls. and ((via or trench or recess or opening or hole) with light)) not (438/706,687,688.ccls. and ((via or trench or recess or opening or hole) with light))	USPAT; US-PGPUB	2003/02/21 09:55
7	18	((438/$.ccls. and ((via or trench or recess or opening or hole) with light)) not (438/706,687,688.ccls. and ((via or trench or recess or opening or hole) with light))) and (light with sacrificial)	USPAT; US-PGPUB	2003/02/21 09:55

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TITLE: Method of making a semiconductor device using a silicon carbide hard mask

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Still another process for making a semiconductor device, which may benefit from use of the method of the present invention, is illustrated in FIGS. 4a-4e. In that process, **via** 407 is filled with **sacrificial light** absorbing material ("SLAM") 408 to create the structure shown in FIG. 4a. That SLAM may comprise a dyed spin-on-polymer ("SOP") or dyed spin-on-glass ("SOG") that has dry etch properties similar to those of dielectric layer 403 and light absorbing properties that enable the substrate to absorb light during lithography. SLAM 408 may be spin coated onto the FIG. 1c structure in the conventional manner.

1. A method of forming a semiconductor device comprising: forming on a substrate a silicon carbide containing layer; introducing into a plasma enhanced chemical vapor deposition reactor, which contains the substrate that is covered with the silicon carbide containing layer, a gas that is selected from the group consisting of oxygen, nitrogen, argon, hydrogen, xenon, krypton, nitrous oxide, carbon monoxide, and carbon dioxide; striking a plasma at RF power of between about 100 and about 3000 watts to convert the surface of the silicon carbide containing layer from a hydrophobic surface to a hydrophilic

surface; depositing a **sacrificial light** absorbing material, which is selected from the group consisting of a dyed spin-on-glass and a dyed spin-on-polymer, on the surface of the silicon carbide containing layer after the silicon carbide containing layer has been exposed to the plasma; and then depositing a layer of photoresist on the surface of the **sacrificial light** absorbing material.

4. A method of forming a semiconductor device comprising: forming on a substrate a silicon carbide hard masking layer; introducing into a plasma enhanced chemical vapor deposition reactor, which contains the substrate that is covered with the silicon carbide hard masking layer, helium and a gas that is selected from the group consisting of oxygen, nitrogen, argon, hydrogen, xenon, krypton, nitrous oxide, carbon monoxide, and carbon dioxide; striking a plasma at RF power of between about 100 and about 3000 watts to convert the surface of the silicon carbide hard masking layer from a hydrophobic surface to a hydrophilic surface; depositing a **sacrificial light** absorbing material, which is selected from the group consisting of a dyed spin-on-glass and dyed spin-on-polymer, on the surface of the silicon carbide hard masking layer after it has been exposed to the plasma; and then depositing a layer of photoresist on the **sacrificial light** absorbing material.